CLAIMS OF THE INVENTION

I claim:

1.   A method of compressing data in a graphics processing system comprising:

defining a plurality of tiles of data;

defining a tile format table containing a status entry for each of said plurality of tiles;

identifying the number of primitives contained in a tile;

compressing said tile when said compressed tile is smaller than said tile;

setting said status entry for said compressed tile in said tile format table;

storing said compressed tile in a memory.

2.   The method of claim 1 wherein a tile is compressed when said tile has a number of primitives less than or equal to 1/3 of the number of pixels in said tile.

3.   The method of claim 1 wherein said compression is lossless.

4.   The method of claim 1 wherein each of said tiles comprises a cache line.

5.   The method of claim 4 wherein said pixels represent Z data.

6.   The method of claim 5 wherein said compression comprises storing a plane equation for each primitive, each primitive having a fragment ID number, and storing the fragment ID for each pixel in each primitive.

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7.   The method of claim 6 wherein the plane equation of pixels in the group is computed by subtracting Z pixels in the group that have the same fragment ID number from the Z value of the first pixel in the group of that fragment ID number.

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8.   The method of claim 2 wherein tiles read from said memory are decompressed when said status bit indicates that said tile is a compressed tile.

9.   A graphics processing system comprising:

10 a first memory for storing a plurality of tiles of data;

a second memory for storing a tile format table containing a status entry for each of said plurality of tiles;

a compression system coupled to said first and second memories for compressing said tile when said compressed tile is smaller than said tile, for setting said status entry for said

15 compressed tile in said tile format table, and for storing said compressed tile in a memory.

10.   The graphics processing system of claim 9 wherein a tile is compressed when said tile has a number of primitives less than or equal to 1/3 of the number of pixels

20 in said tile.

11.   The graphics processing system of claim 9 wherein said compression is lossless.

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12.   The graphics processing system of claim 9 wherein each of said tiles comprises a cache line.

5   13.   The graphics processing system of claim 12 wherein said pixels represent Z data.

14.   The graphics processing system of claim 13 wherein said compression comprises storing a plane equation for each primitive, each primitive having a fragment 10 ID number, and storing the fragment ID for each pixel in each primitive.

15.   The graphics processing system of claim 14 wherein the plane equation of pixels in the group is computed by subtracting Z pixels in the group that have the same fragment ID number from the Z value of the first pixel in the group of that fragment ID 15 number.

16.   The graphics processing system of claim 11 wherein tiles read from said memory are decompressed when said status bit indicates that said tile is a compressed tile.

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